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| 1. How many valence electrons does an alkali metal have? | 1. 1 |
| 1. How many valence electrons does an alkaline earth metal have? | 1. 2 |
| 1. How many valence electrons does a halogen have? | 1. 7 |
| 1. How many valence elections does a noble gas have? | 1. 8 (or 2 for the case of helium) |
| 1. How many valence electrons does a group 16 element have? | 1. 6 |
| 1. How many valence electrons does a group 15 element have? | 1. 5 |
| 1. How many valence electrons does a group 14 element have? | 1. 4 |
| 1. How many valence electrons does a group 13 element have? | 1. 3 |
| 1. How do metals follow the octet rule? | 1. Atoms of metals tend to lose their valence electrons, leaving a complete octet in the next-lowest energy level. |
| 1. How do nonmetals follow the octet rule? | 1. Atoms of nonmetals tend to gain electrons or share electrons with other nonmetals to achieve a complete octet. |
| 1. Role the 20 sided dice… write the electron dot structure of the atom that has the atomic number found on the dice. | 1. Answers will vary |
| 1. Role the 20 sided dice… write the electron configuration of the ion. | 1. Answers will vary |
| 1. List 5 common atoms that form +2 ions | 1. Be, Mg, Ca, Sr, Ba, Ra, Zn, Cd, Hg, Cu, Fe |
| 1. List 5 common atoms that form +1 ions | 1. H, Li, Na, K, Rb, Cs, Fr, Cu, Ag, Au |
| 1. List 2 common atoms that form -1 ions | 1. F, Cl, Br, I, |
| 1. List 2 common atoms that form -2 ions | 1. O, S |
| 1. List 2 common atoms that form -3 ions | 1. N, P |
| 1. Describe formula unit | 1. Formula unit is the lowest whole-number ratio of ions in an ionic compound. |
| 1. Describe an ionic bond | 1. Ionic bonds are the electrostatic forces that hold ions together in ionic compounds. |
| 1. List three properties of ionic compounds | 1. Most ionic compounds are solids at room temperature, have high melting points, and can conduct electricity when melted or dissolved in water. |
| 1. Define coordination number | 1. Coordination number is the number of oppositely charged ions that surround an ion in a crystal. |
| 1. Describe the “Electron Sea” model of metal bonding | 1. The valence electrons of metal atoms can be modeled as a sea of electrons. The valence electrons are free to flow around the metal ions. |
| 1. List three types of crystal patterns | 1. Hexagonal close-packed, simple cubic, body-centered cubic, and face-centered cubic |
| 1. Define alloy | 1. Alloys are mixtures composed of two or more elements where at least one is a metal. |
| 1. Why are alloys important? | 1. Alloys are important because their properties are often superior to those of their component elements. |